

OCTAGONAL INTERCONNECTION NETWORK FOR LINKING PROCESSING  
NODES ON AN SOC DEVICE AND METHOD OF OPERATING SAME

**ABSTRACT OF THE DISCLOSURE**

5 An octagonal interconnection network for routing data packets. The interconnection network comprises: 1) eight switching circuits for transferring data packets with each other; 2) eight sequential data links bidirectionally coupling the eight switching circuits in sequence to thereby form an octagonal ring configuration; and  
10 3) four crossing data links, wherein a first crossing data link bidirectionally couples a first switching circuit to a fifth switching circuit, a second crossing data link bidirectionally couples a second switching circuit to a sixth switching circuit, a third crossing data link bidirectionally couples a third switching circuit to a seventh switching circuit, and a fourth crossing data link bidirectionally couples a fourth switching circuit to an  
15 eighth switching circuit.